

# PCIA - White Paper on CPP Implementation

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## Attachment – Conceptual Framework for Impact of CPP on Demand

In order to fully understand the role that CPP plays in driving demand for wireless telecommunications service, it is important to view it from three perspectives – the existing telecommunications marketplace, demand for wireless telecommunications service and the part that CPP plays in driving that demand. The condition of the overall telecommunications marketplace will be instrumental in driving demand for wireless telecommunications services and more specifically in the demand for Calling Party Pays.

It is also important to note that this must be understood in the context of how the overall marketplace conditions in the United States might vary with that of the rest of the world. These differences are crucial to understand when attempting to determine how Calling Party Pays' implementations elsewhere may or may not have similar demand impacts in the United States.

### Factors Impacting Wireless Demand

The US wireless telecommunications market is rapidly converging and evolving toward a marketplace where bundled services, lowering prices and increasing demand are becoming commonplace. Based on this paradigm, several key factors are and will be driving demand for wireless telecommunications services. These factors include availability of service, price, and the degree of substitutability of services. Each of these factors are discussed in this White Paper, but additional analysis is needed to better understand their interaction and ultimate impact on the introduction of CPP in the United States.

#### 1) Availability of Service

Wireless telecommunications has developed over time into a service that is available to most Americans. Today, cellular operators have coverage throughout much of the US, and PCS operators are rapidly building out their own networks. In fact, as reported by Paul Kagan & Associates,

“We now estimate just more than 250 mil. Americans have access to at least one PCS service provider—that’s 91% of the country”<sup>7</sup>

This type of explosive expansion is remarkable, given the period of time it has taken PCS operators to build their networks. It is clear that with a combination of incumbent cellular carriers and a number of new PCS entrants, availability of wireless telecommunications services in the US is robust.

There is a second component of service availability that is significant to the demand picture. Not only does the service need to be available in terms of network coverage it must also be available in terms of ease of acquisition. Consumers want to be able to buy where they shop, work, and live. It has to be easy.

Wireless carriers have responded with a wide range of distribution channels. Consumers can now readily obtain wireless service where they shop. Most wireless carriers have their own retail stores, as well as retail distributors that expand their distribution reach. Sales

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<sup>7</sup> “PCS Proliferation: Coverage Hits 250 Mil. POPs,” excerpted from *Wireless Market Stats* (No. 117, June 29, 1999), Paul Kagan Associates, Inc.



## PCIA - White Paper on CPP Implementation

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representatives and account executives are used to reach businesses and provide wireless services to the workforce. There is still more. Wireless carriers are now expanding into less traditional distribution channels. Purchasing service via the Internet or over the phone through an 800 number is widely available. Consumers can easily purchase wireless without leaving their homes. Prepaid services will expand this distribution network even further into less-traditional areas, increasing the ease of obtaining wireless service. This will continue to help drive demand for wireless service.

Widespread wireless telecommunication service availability, including both network and distribution coverage, is likely to grow even more robust with the expansion of additional PCS carriers. This, in turn will increase downward pressure on price, which will increase demand for wireless services.

### 2) Price

Price continues to be a key driver for demand in the increasingly competitive wireless telecommunications marketplace. As prices have come down, penetration into new customer segments has become evident. Initially, cellular subscribers were principally business customers and higher income consumers. More recently, consumers are purchasing mobile telephones for their own personal use or to have in case of an emergency. It is now not unusual to see college students with a wireless phone.

Evidence of the impact of dropping prices on increased demand for wireless service is seen in the rapid growth observed between 1997 and 1998. At the end of 1998, wireless subscriptions had grown to more than 68.5 million, representing an increase of 23% over the prior year<sup>8</sup>. This skyrocketing growth is, in part, a result of a continuing decline in wireless service pricing and growing competition with the introduction of service by the PCS operators.

Several wireless offering trends have lead the way in this growth surge.

#### a) Packaged minutes

The introduction of all-inclusive minute packages where a wireless subscriber can use their mobile phone from anywhere in the United States and call to anywhere in the United States for the same usage rate have helped in the explosive wireless subscriber growth recently seen in the US. The impact of these packaged plans has been significant, as evidenced by the growth experienced by AT&T. According to a recent industry publication,

"Setting the pace is the company that started the One-Rate craze, which it could be argued was the catalyst for the change in the growth curve. AT&T's cellular group added an estimated 355k customers in the first quarter, more than 20x its growth in 1Q '98."<sup>9</sup>

This illustrates the significance of the role that price plays in the demand for wireless services in the US. The entire packaged minutes plan concept is built on the premise that customers can obtain wireless service for a reasonable price, without being concerned that additional charges are being incurred. There are no roaming or long distance charges to be added.

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<sup>8</sup> "Wireless Subs Surge 23% in 1998," excerpted from *Wireless Market Stats* (No. 113, February 26, 1999), Paul Kagan Associates, Inc.

<sup>9</sup> "Wireless Subscriber Growth: Expanding Thanks to One-Rate Plans," excerpted from *Wireless Market Stats* (No. 117, June 29, 1999), Paul Kagan Associates, Inc.



# PCIA - White Paper on CPP Implementation

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When a customer buys the package, they can be fairly certain that the only additional charge will be taxes.

## b) Prepaid Service

A second service offering trend that illustrates the significance of price on the demand for wireless services is the growing demand for prepaid services. Prepaid, like the packaged minutes plan concept, offers the customer the ability to control their monthly costs. It is also geared toward consumers who have not established sufficient credit, or might not be able to otherwise afford the service.

While the US has not seen the same level of prepaid market share as other countries, it has become an increasingly larger number of subscribers. Many of the new PCS carriers have built a significant prepaid subscriber base as they provide an attractive service for consumers who want to be able to control their wireless telecommunications costs. Some of the PCS carriers are reporting that as much as 25-30% of their new additions are prepaid subscribers. With this type of growth, it is expected that prepaid will become an increasing significant percent of the wireless market share in the coming years.

In fact, according to an industry analyst recently quoted in a New York Times article,

"Prepaid phone services nearly doubled, to 1.8 million, in 1998 from their 1997 level of 533,000, according to the Yankee Group, Boston-based telecommunications analysts."<sup>10</sup>

The ability for customers to control their costs makes prepaid wireless services an attractive product for many consumers. As wireless carriers in the US continue to expand their prepaid service offerings this number is likely to grow.

## 3) Substitutability of Service

Demand for wireless service may also be driven by its ability to become a substitute for wireline telephone service. To the extent that consumers begin to see wireless as a reasonable alternative to the landline telephone, demand for wireless is likely to see significant increase in demand.

It is important to note that unlike other areas of the world, the United States has enjoyed widespread, affordable landline telephone service. In fact, it has long been readily available to a large majority of the population. The significant number of US households who have local telephone service evidences this. According to a report recently issued by the FCC, as of March 1999 there were 98.5 million US households with telephones and this represents 94% of the total households. With such widespread availability, wireless telecommunications will only be seen as a potential substitute to the "wired" telephone as pricing and charging mechanisms are more closely aligned. Wireless has to be perceived to be a viable replacement.

There are indications that this trend has already begun. Consumers are beginning to add a wireless telephone, rather than an additional landline telephone. It can be expected that as prices for wireless telecommunications services continue to decline, more consumers will begin to view wireless as a real alternative to their wired phones.

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<sup>10</sup> Roy Furchgott, "Prepaid Services Help Cut Phone Costs," *The New York Times* (February 4, 1999).



## PCIA - White Paper on CPP Implementation

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The introduction of packaged minutes is one indicator of the move toward wireless being perceived as a viable substitute for wireline service. With today's packages of minutes, consumers can pay as little as \$.10 per minute to call anywhere in the US. It also eliminates the hefty roaming charges and allows consumers to really know what each call will cost them from their mobile phones. Unlike the past, with the bundled minute plans, wireless subscribers will not be hit with hidden extras. With this type of plan, the differences between wired and wireless become less significant and are becoming closer to true substitutes for each other.

### Role of CPP in Demand for Wireless Telecommunications Service

Demand for wireless telecommunications is driven by such factors as availability, price and substitutability for wireline service. Now it is important to understand the role that CPP plays in the demand picture. This must be viewed in the context of the US marketplace and the way in which the telecommunications industry has developed.

CPP is clearly linked to the question of price and the role it plays in demand for wireless services. To the extent that CPP helps to reduce the cost of wireless services for the wireless subscriber, it is anticipated that demand will increase. This correlation is even more significant to the price conscious consumer. In fact, in countries that have recently introduced CPP, the increase in usage among prepaid subscribers was significantly higher than what was seen with contract customers. According to a recent study conducted by The Strategis Group, one operator in Chile saw a significant change in prepaid usage with the advent of CPP. CTC Chile stated in part,

"... Calling Party Pays stimulated usage for pre-paid subscribers and transformed the incoming/outgoing ratio from 30% incoming/70% outgoing at end year 1998 to the current ratio of 70% incoming/30% outgoing."<sup>11</sup>

In this case, the average minutes of use per month for CTC Chile's prepaid subscribers increased by more than 300% following the introduction of CPP, with most of that increase being seen through incoming usage. CPP had less of an impact on the contract subscribers, where average minutes of use increased by 18%. Clearly, CPP had a more significant impact on the prepaid subscribers' usage than their contract counterparts. This is understandable given the more cost-conscious nature of the prepaid subscriber.

It is important to note that while CPP might have significant impact on demand for wireless, especially as a usage stimulator for prepaid users, in other countries, it might not be as great in the US. This might be true due to the market share that prepaid enjoys in other areas of the world as compared to the US.

The prepaid market for the US Wireless Industry differs from what is seen in other countries. In the US, prepaid was estimated to be 3.5% of the wireless market at year-end 1998, while Western Europe is projected to have approximately 28% of their cellular subscribers prepaid by year-end 1999<sup>12</sup>.

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<sup>11</sup> "Calling Party Pays: International Case Studies," prepared for the PCIA by The Strategis Group.

<sup>12</sup> "Yankee Group Study Shows Prepaid Wireless Rates Go Mainstream, Market to Grow," August 17, 1999 (see [www.yankeegroup.com](http://www.yankeegroup.com)). Paul Quigley, "Prepaid Demand Outstrips Supply," Wireless Week, January 11, 1999.



# PCIA - White Paper on CPP Implementation

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To the extent that CPP appears to have more significance for prepaid, it is likely to help drive demand for prepaid services in the US, but might not have as great an impact on overall demand for wireless services. Additional study is needed to determine the exact nature of the relationship between the introduction of CPP and overall wireless demand.

In addition to driving usage demand, CPP can also drive demand for wireless subscription. Once again, to the extent that CPP drives down price for the wireless subscriber, it makes wireless service attractive to more consumers. It is less clear how closely linked the demand for service is to CPP. Several of the countries that introduced CPP did it in conjunction with other initiatives, making it difficult to determine which was the overarching driver to increased penetration levels.

## Summary

Availability of service, price and the degree of substitutability for landline service drive demand for wireless services. CPP clearly plays a certain role in this equation. This is true from two perspectives. First, CPP drives down the price of wireless service for wireless subscribers. This in general should help to stimulate increased demand.

CPP also makes wireless service look more like its wireline counterpart. Today, wireless subscribers must pay for both incoming and outgoing usage. This is quite different from the wireline service they are used to. To the extent that CPP makes wireless more "like" their wireline phone, it will be seen as a more viable alternative to landline service – it will be seen as more of a substitute. This second factor will also help to drive demand for wireless.



## PCIA - White Paper on CPP Implementation

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International Cellular No. 99 (Excerpt). "Brazil's Wireless Industry Enjoys Sustained Growth," Kagan World Media, Ltd., June 24, 1999.

Quigley, Paul. "Prepaid Demand Outstrips Supply," *Wireless Week*, January 11, 1999.

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"Yankee Group Study Shows Prepaid Wireless Rates Go Mainstream, Market to Grow," August 17, 1999 (see [www.yankeegroup.com](http://www.yankeegroup.com)).



## Figures

Figure 1

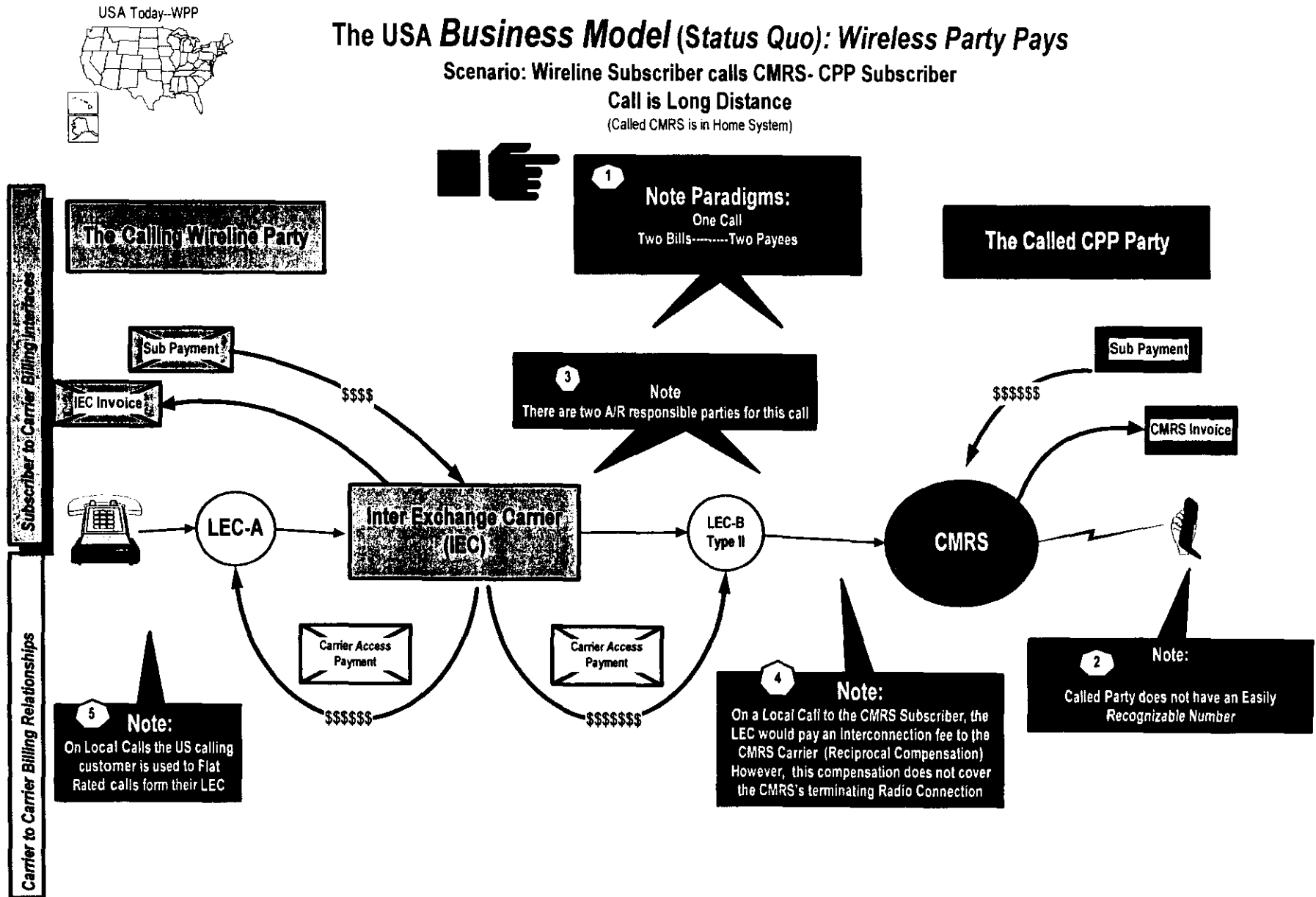




Figure 2

# **The International Business Model (Sent Paid): Calling Party Pays**

Scenario: Fixed Line Subscriber calls Cellular Subscriber

Call is Long Distance  
(Called Subscriber is in Home System)

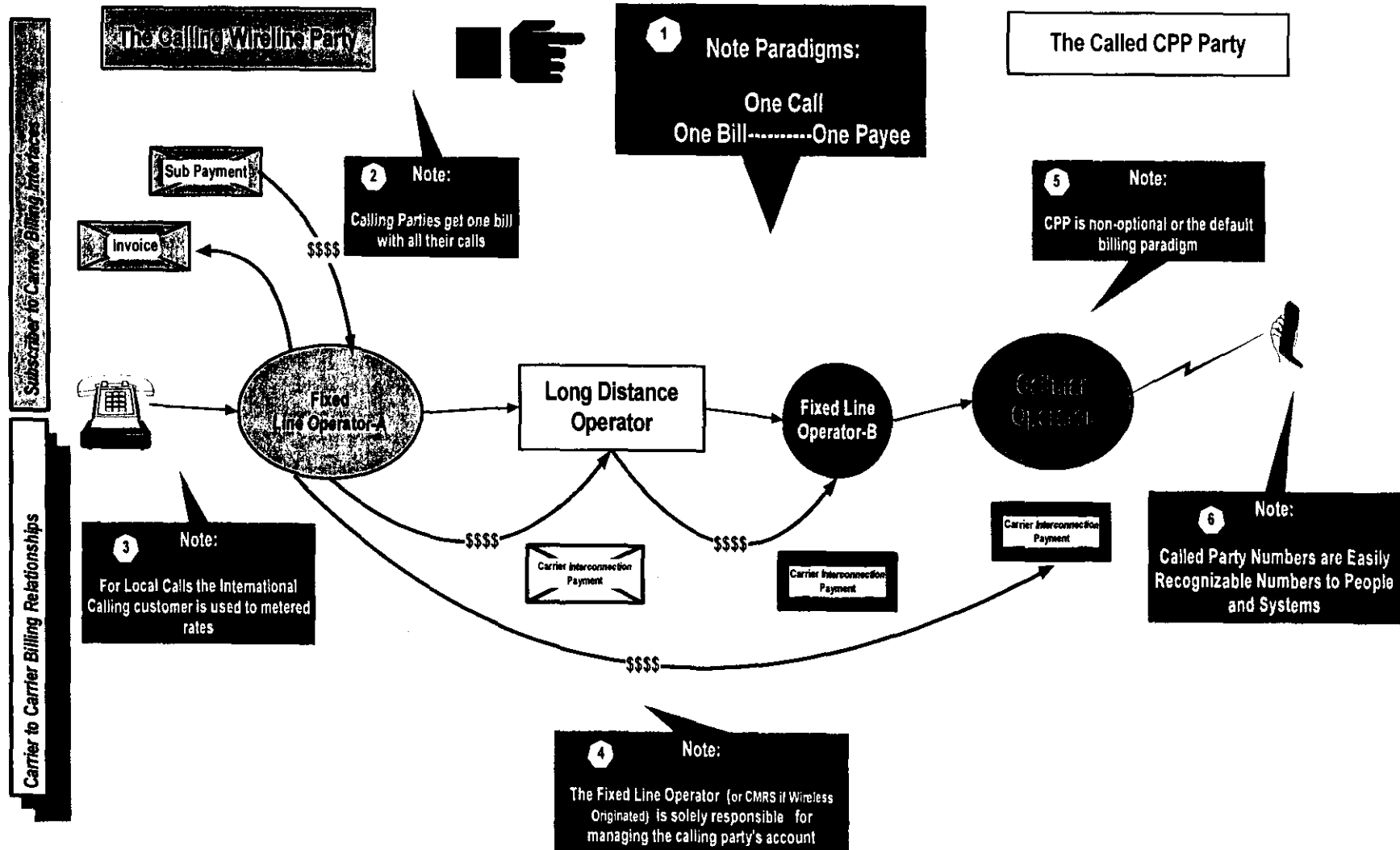


Figure 3

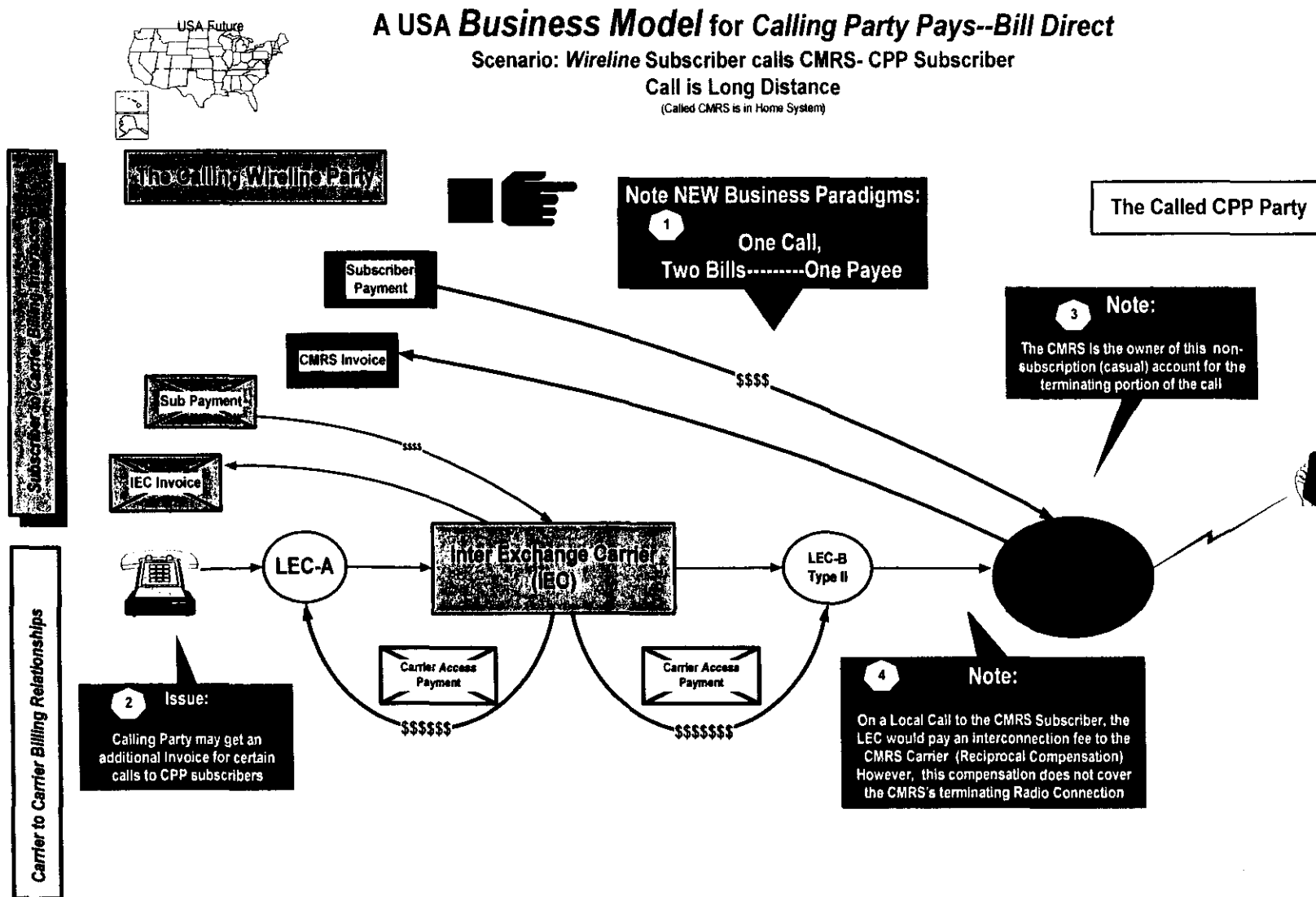


Figure 3A

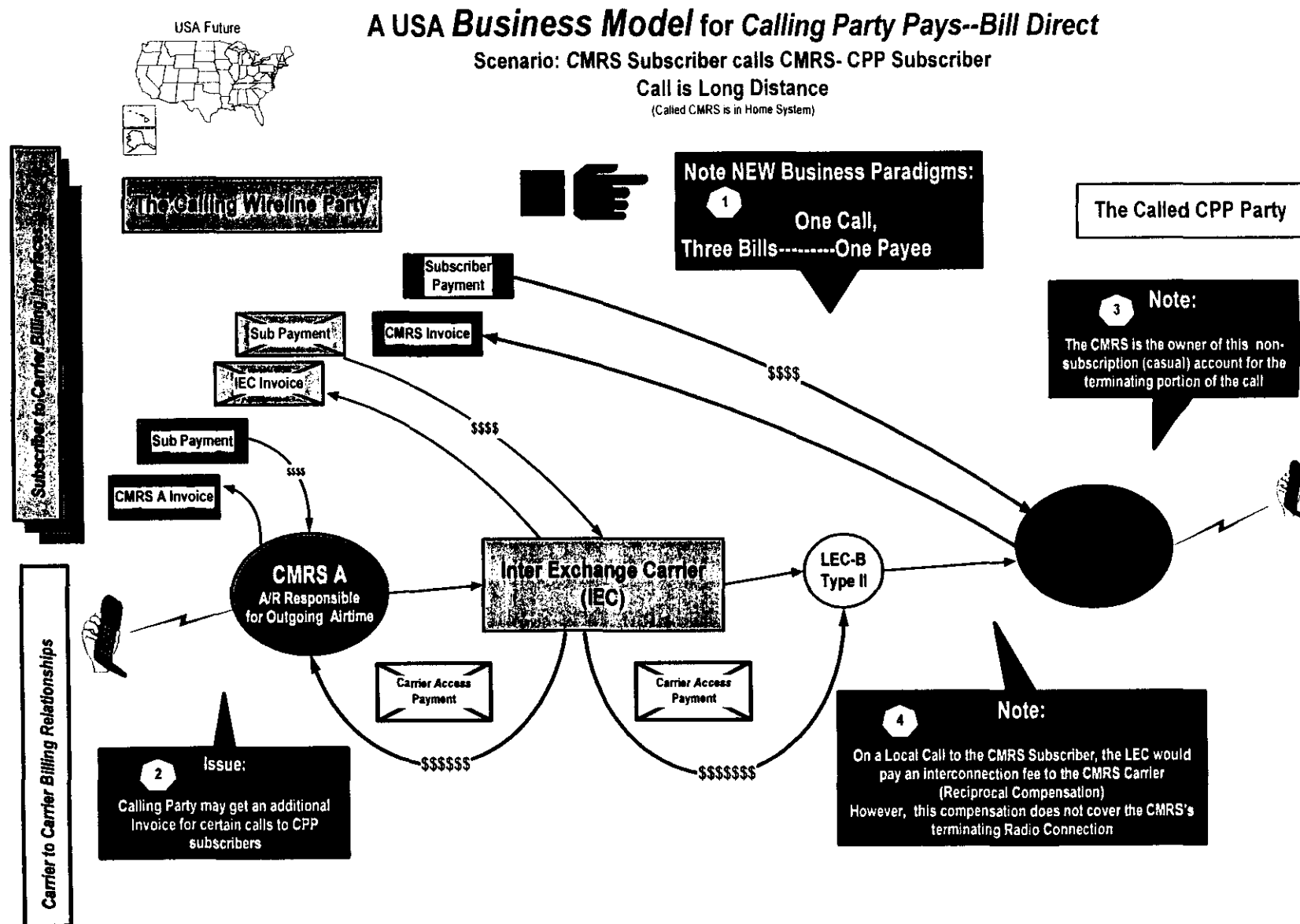


Figure 4

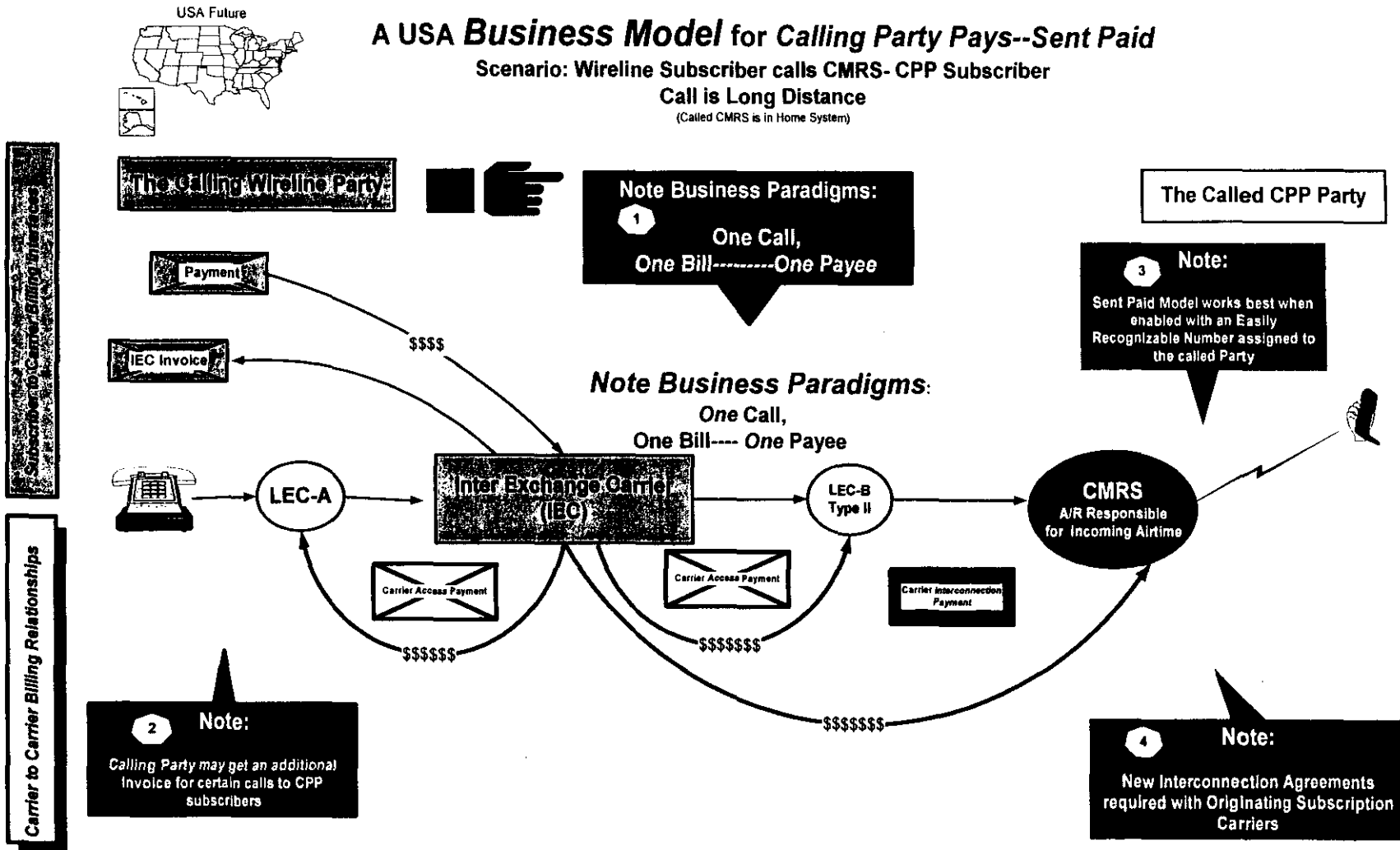


Figure 5

## The Fundamental Cost Economics of "Billing"

*Billing Services are Highly Scaleable*

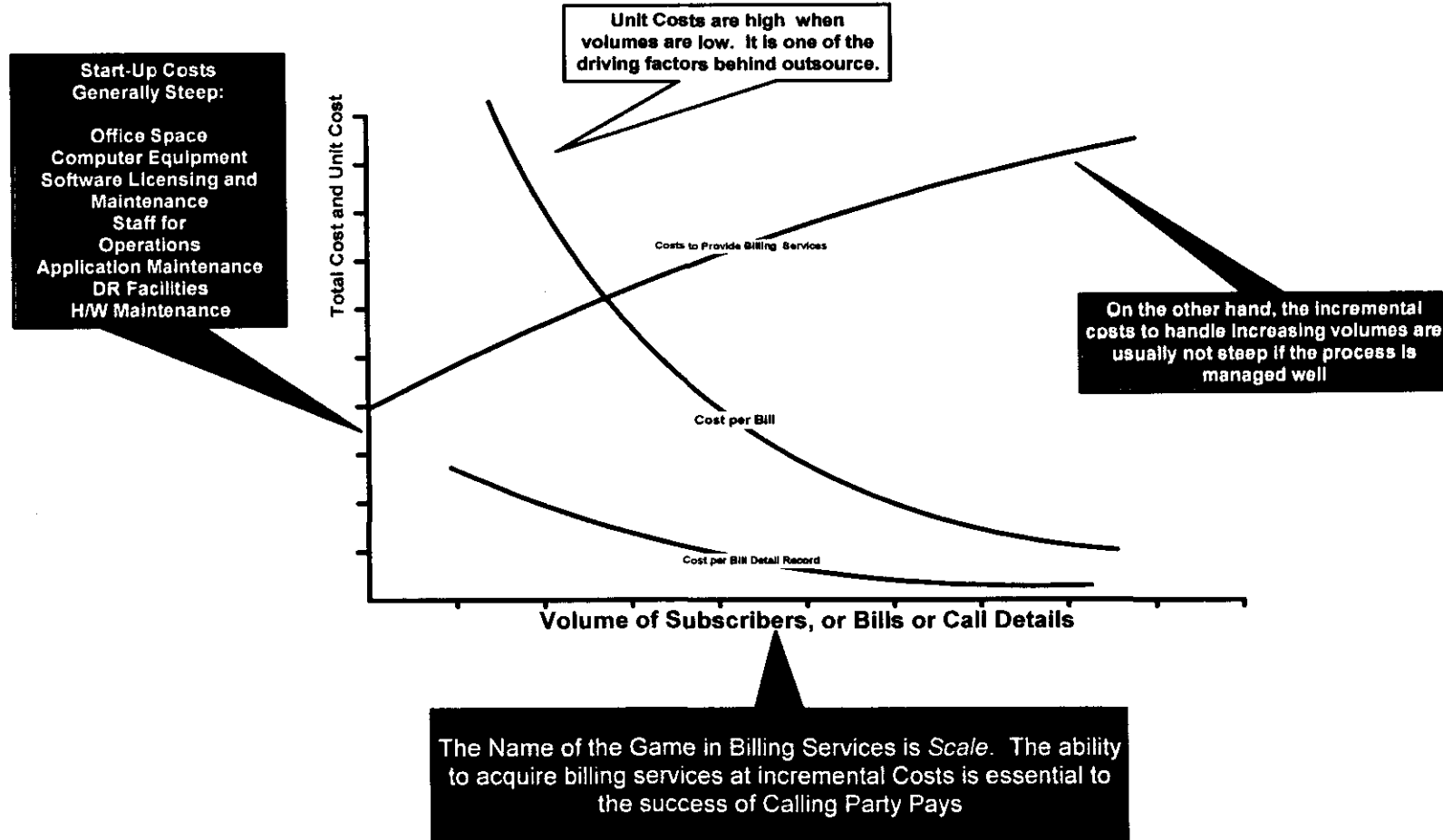


Figure 6

**Billing, Collections and Customer Care Unit Costs for Calling Party Pays  
(Bill Direct)  
Alternative Solutions**

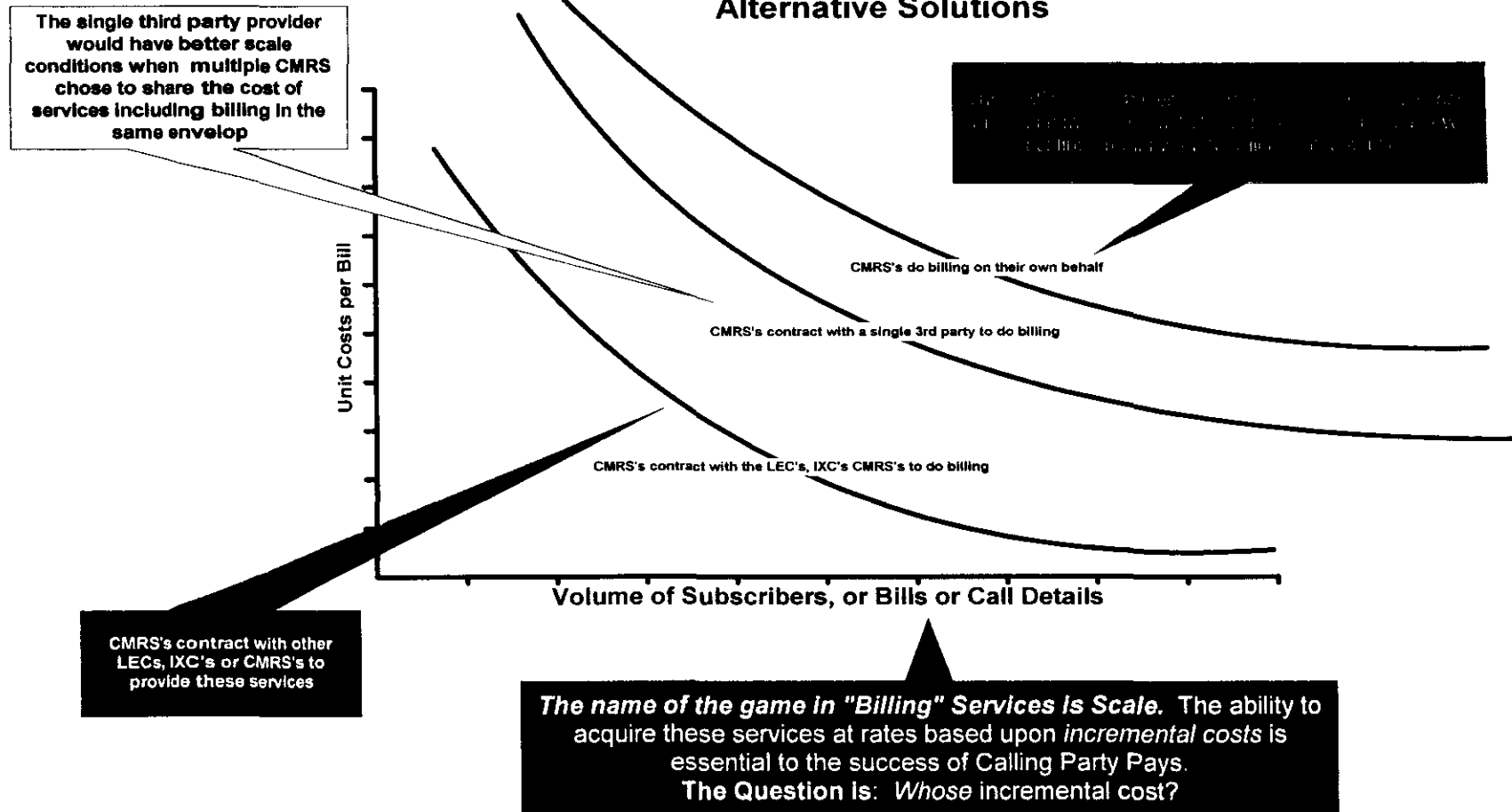
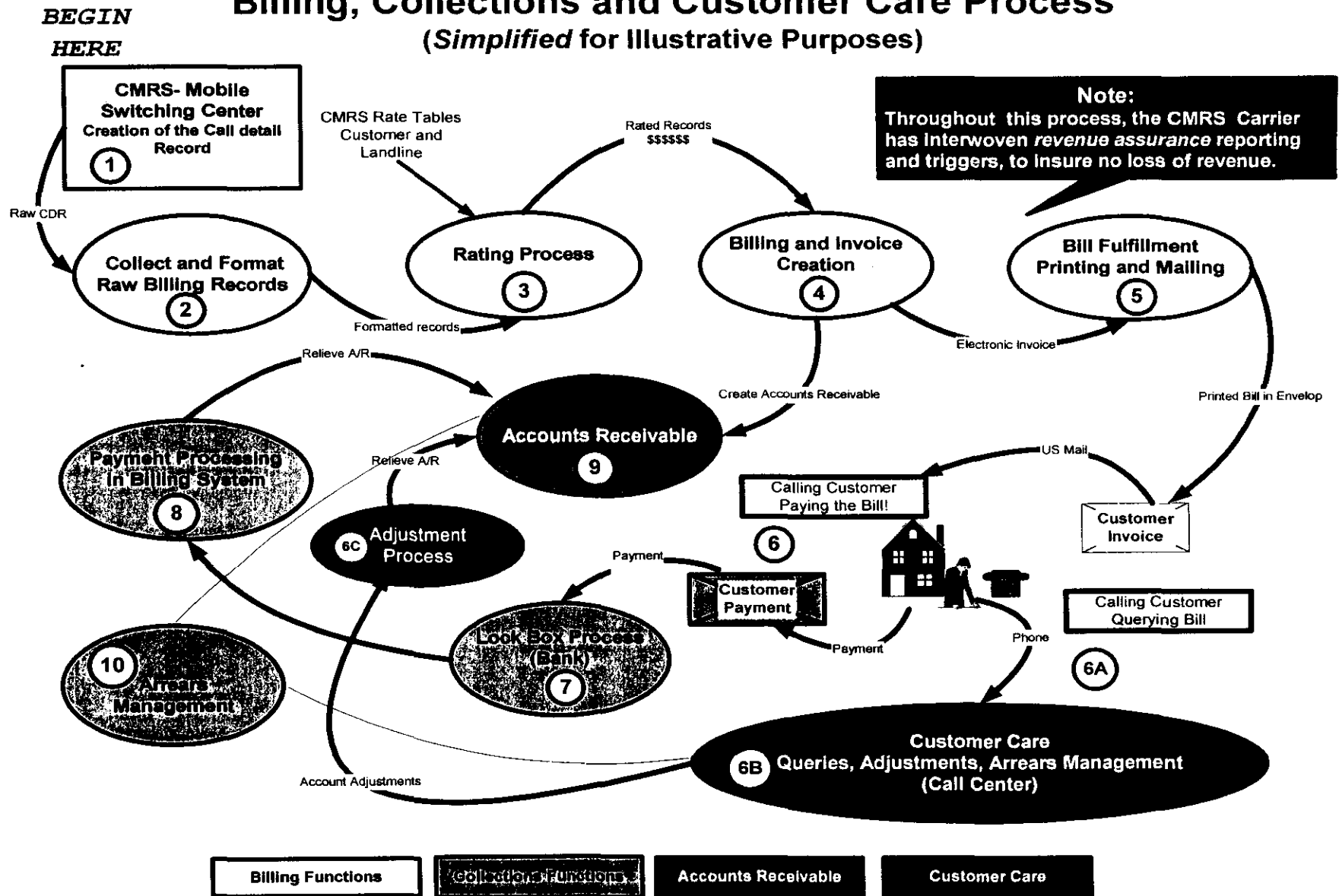


Figure 7

# **Billing, Collections and Customer Care Process** (Simplified for Illustrative Purposes)



**Figure 8**

***Ownership for Billing, Collections and Customer Care Functions***

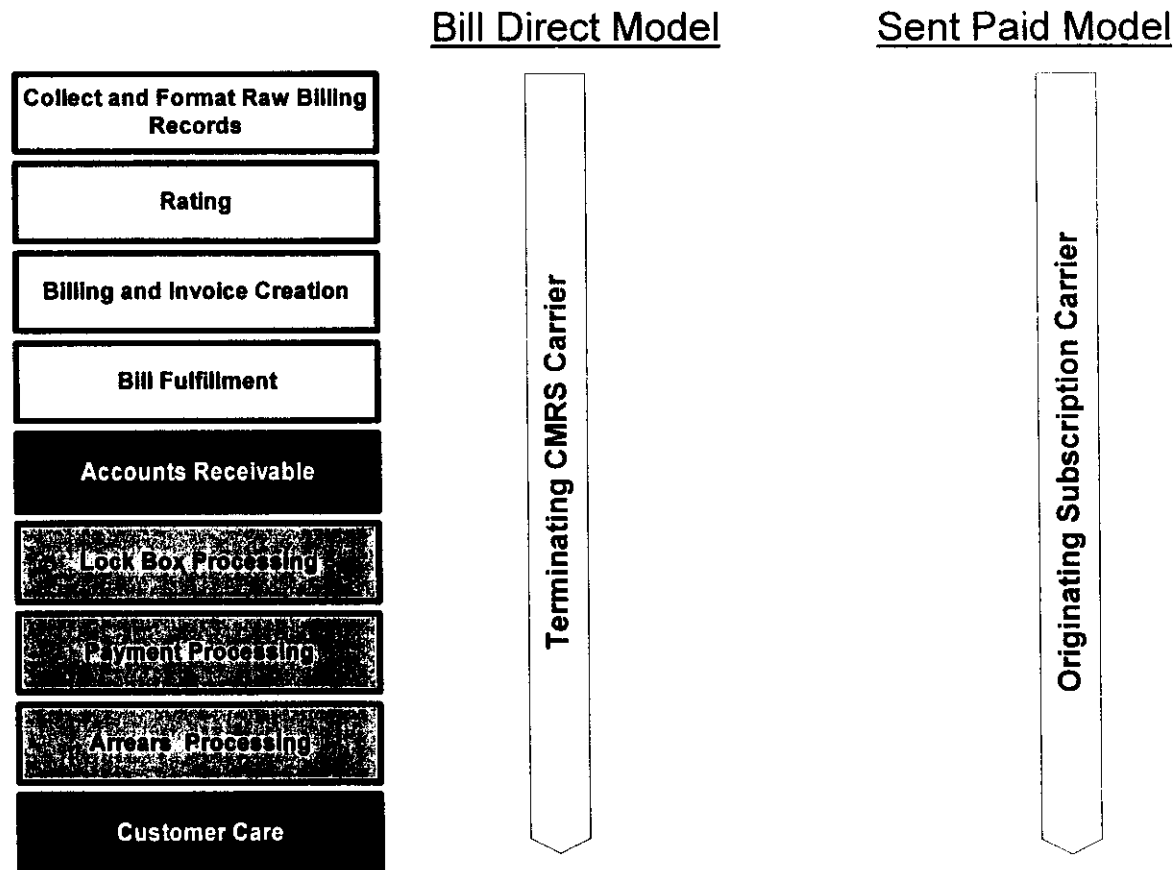
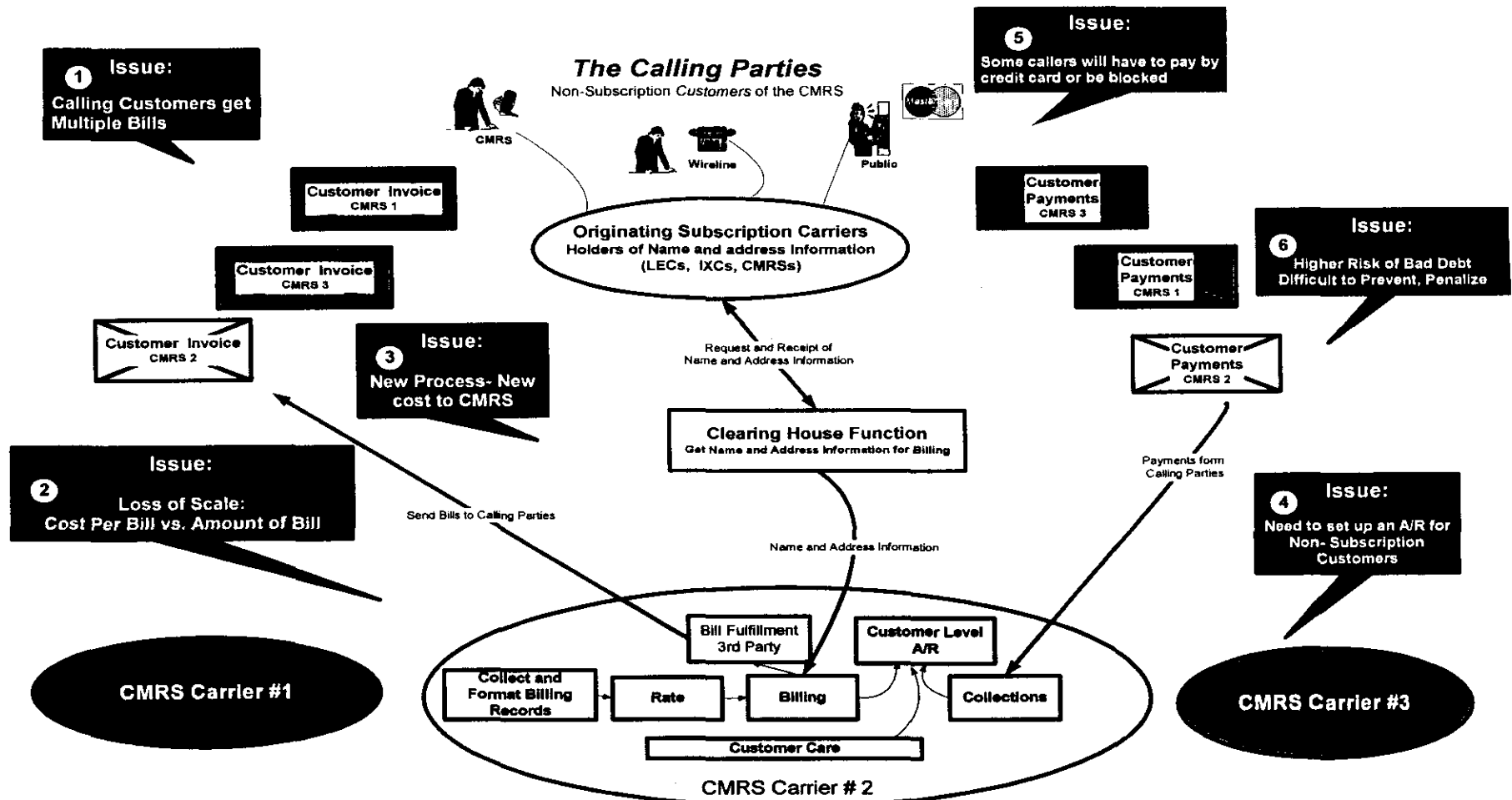




Figure 9

## Billing, Collections And Customer Care for Bill Direct Alternative 1: CMRS Operators "Bill on Their Own Behalf"

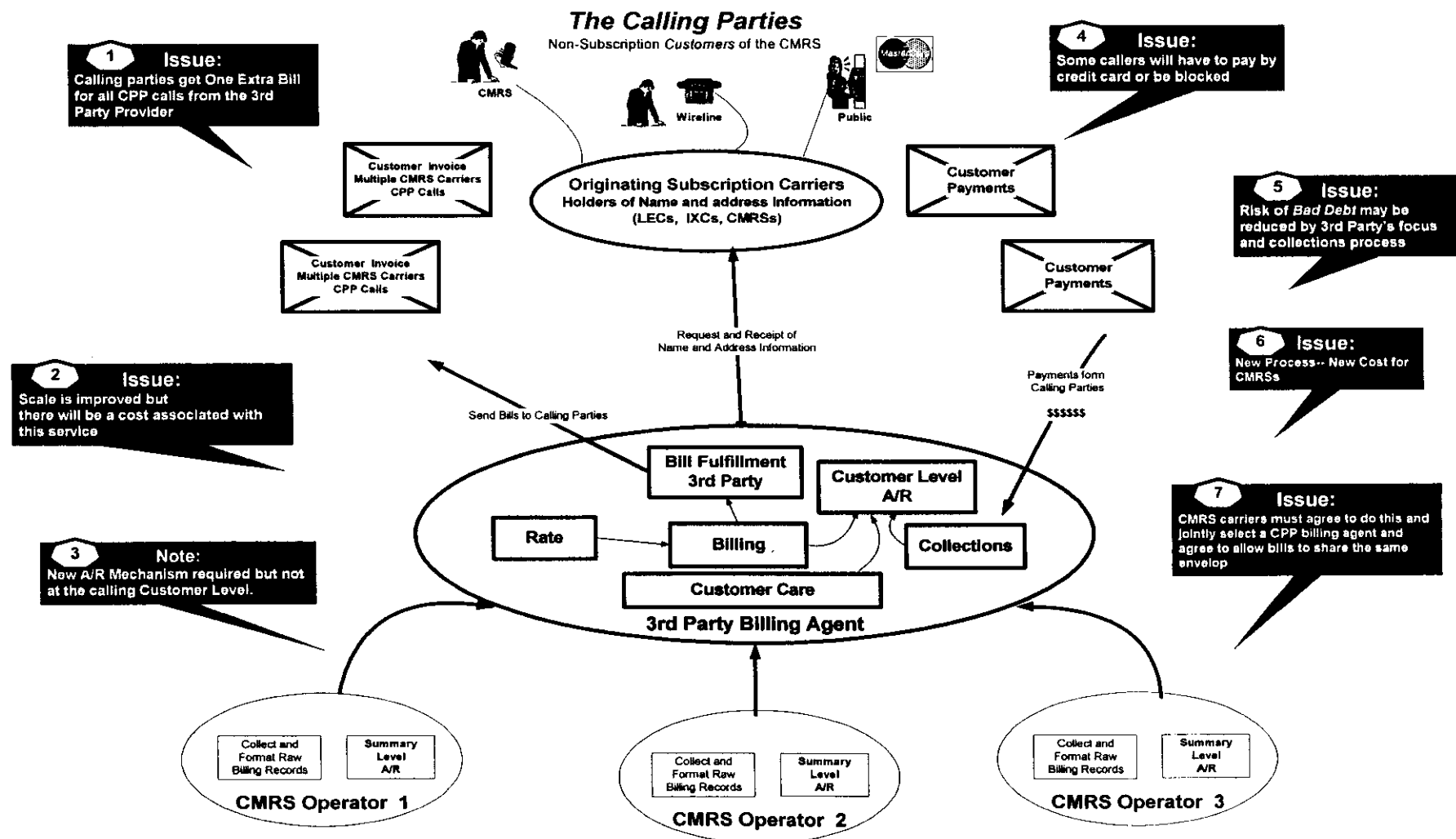


Each CMRS Carrier "Billing" on its Own Behalf

Note: This does not preclude outsourcing, but implies CMRS is doing this as an individual effort

Figure 10

# **Billing, Collections, And Customer Care for Bill Direct** **Alternative # 2: CMRS Operators Select a 3rd Party to Bill on Their Behalf**

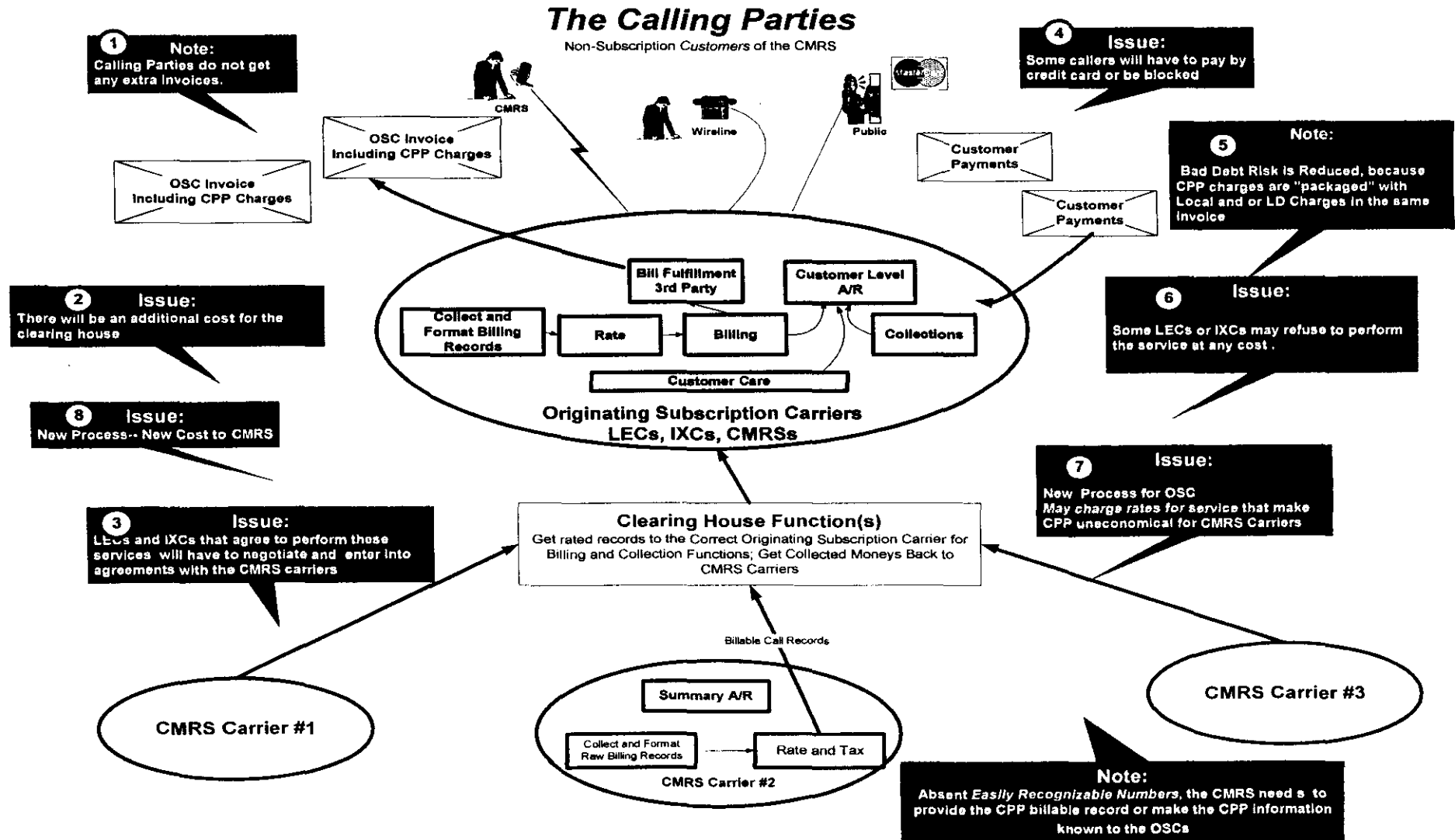


All CMRS Carriers Jointly Select a 3rd Party Provider to do Billing on Their Behalf

Figure 11

## Billing, Collections, And Customer Care for Bill Direct

Alternative # 3: CMRS Operators Contract with Originating Subscription Carriers to Bill on Their Behalf



CMRS Carriers Contract with Originating Subscription Carriers to Perform all or some of the Billing and Care functions

Figure 12

## Billing, Collections, And Customer Care for *Sent Paid Model*

Originating *Subscription Carrier* is Responsible for the Account  
CMRS is Reimbursed via Interconnection Agreement

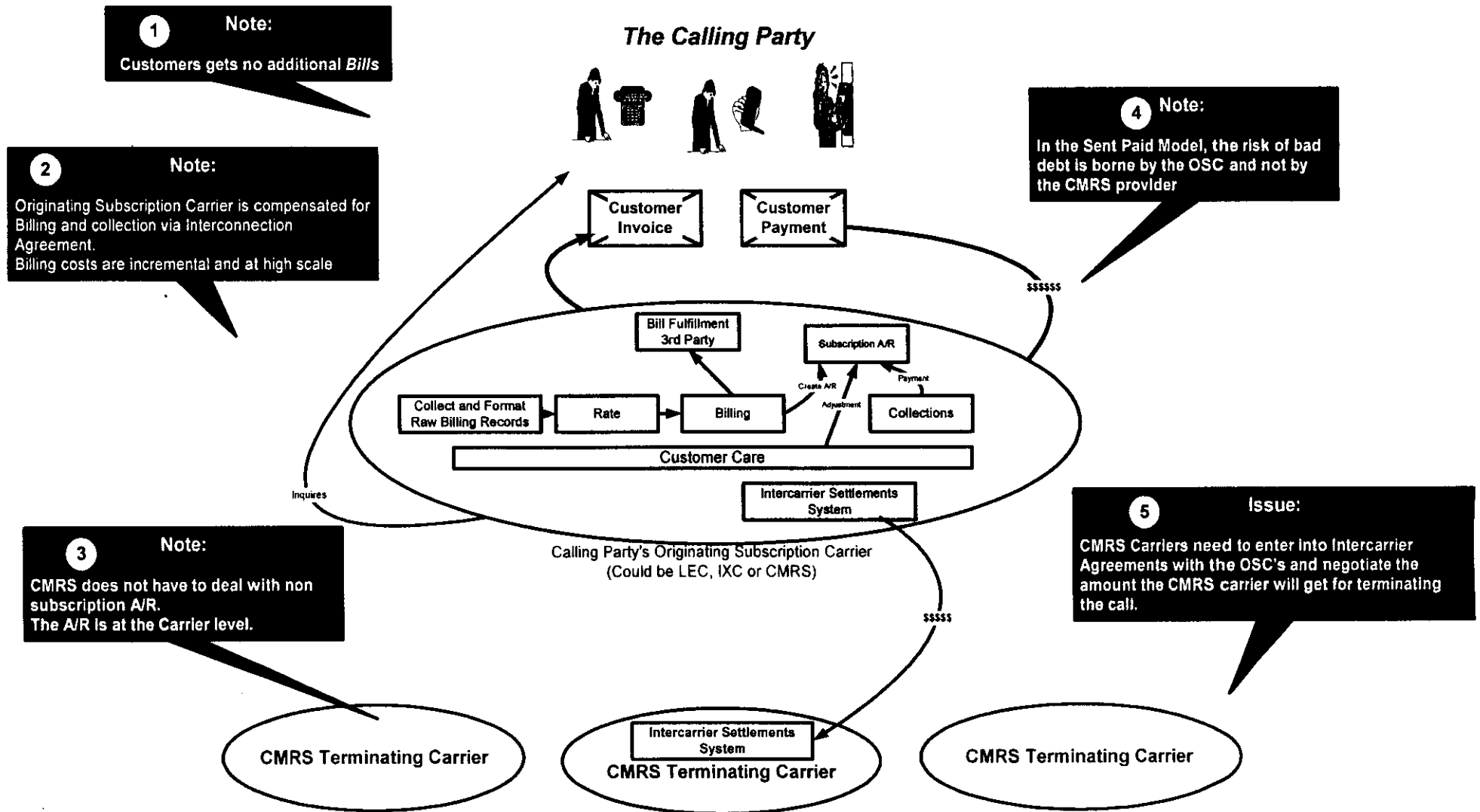


Figure 13

## USA Wireless Party Pays ( Status Quo) Network Diagram

Scenario: Wireline Subscriber calls CMRS-CPP Subscriber

Call is Long Distance

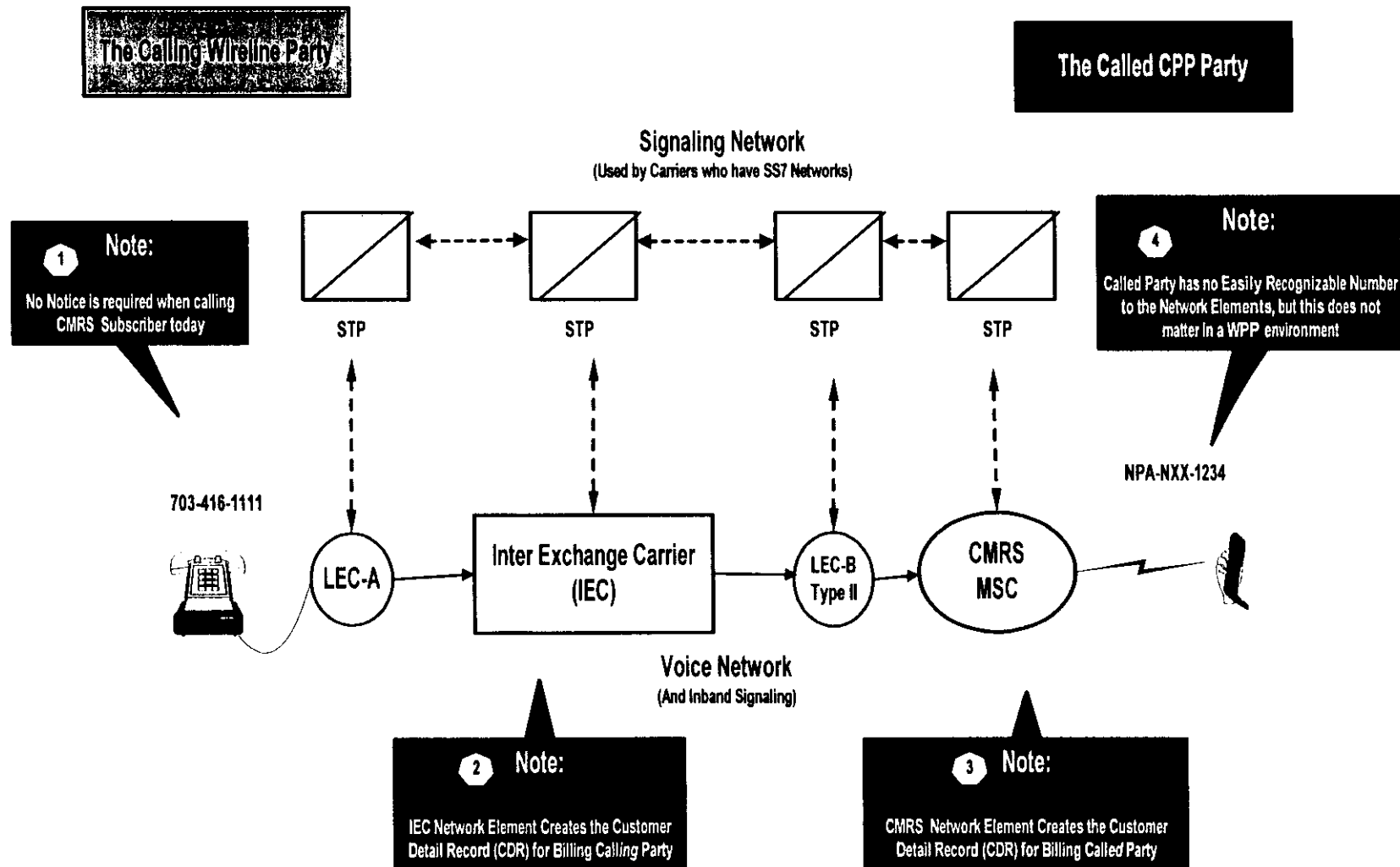


Figure 14

## International Network Architecture for CPP

( Wireline Subscriber calls CMRS-CPP Subscriber)

### General Note:

Internationally, CPP is either non- optional (Europe and Asia) or it is the default billing paradigm and Wireless Party Pays is the Option. Fundamental network aspects of the paradigm, in contrast to the USA proposed implementation, are:

- The use of Easily Recognizable Numbers for Wireless/CPP
- No Notification required during the processing of the call
- No additional leakage control is required, since Billing and Collections are owned by the Fixed Wireline Carrier
- Calls are sent paid, so the CMRS carrier gets paid via Interconnection Agreements and not by the Calling subscriber.

The Calling Wireline Party

The Called CPP Party

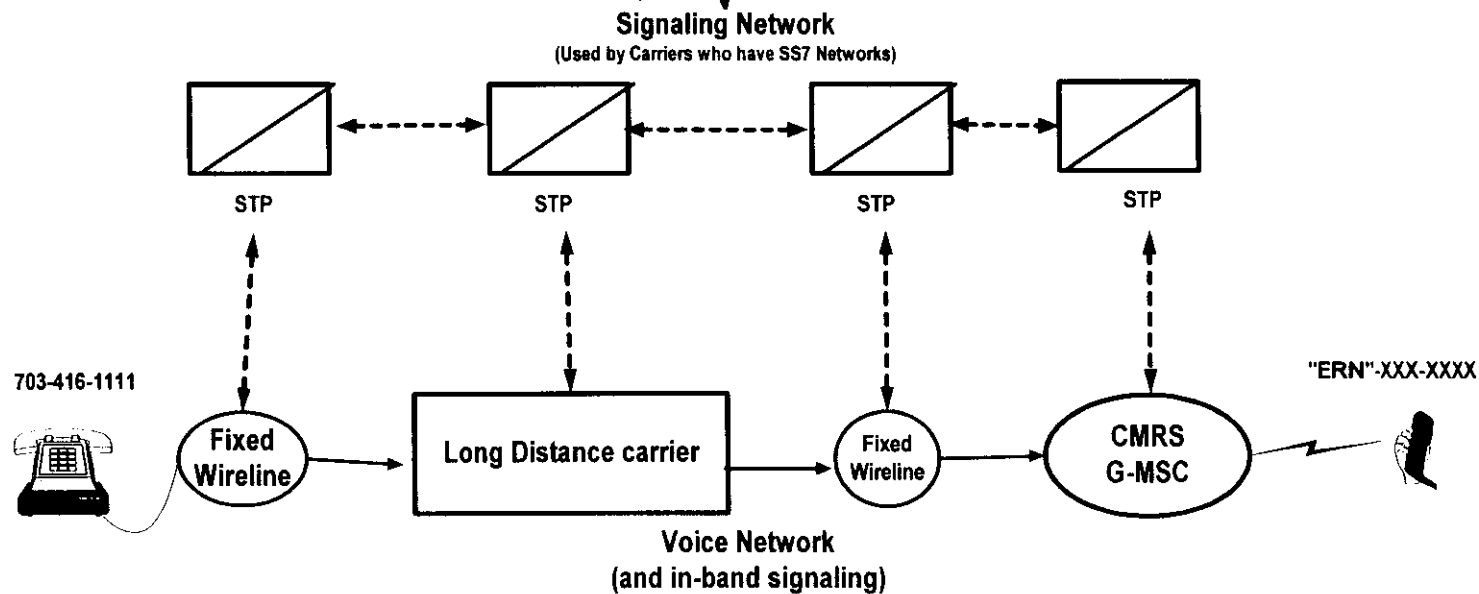


Figure 15

## USA CPP Network Architecture (Bill Direct Model)

Wireline Subscriber calls CMRS-CPP Subscriber

